

**UNIVERSITY OF TAMPERE**

**THE EMERGENCE OF STUDENTS' CRITICAL THINKING SKILLS  
IN GROUP DISCUSSION**

**“A case study of fifth grade students in Sukma Bangsa Bireuen  
Elementary School”**

**Faculty of Education**

**Master's Thesis in education**

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## ABSTRACT

The ability to think critically requires the skills to analyze, evaluate and synthesize problems. It is considered as one of the skills that should be trained in primary school so that its benefit will be felt by students when they arrive in higher education. For fifth grade students, it is important to understand the variety of critical thinking skills which appear and disappear in the learning process. Group discussion is one of the teaching methods used in this research to identify the emergence of students' critical thinking skills. The participants were 50 students from two classes of fifth graders who were then divided into small groups consisting of three or four students. Six small groups in fifth grade A discussed "Indonesia's Strategies in Overthrowing the Colonizers" and six small groups in fifth grade B discussed "Creating the TV Advertisement". The process of group discussion was facilitated by classroom teachers while the researchers observed and recorded it. Observation of students' activities during group discussion was conducted to classify fourteen critical thinking concepts (practice, action, management, appreciation, awareness, care, evaluation, understanding, analysis, appraisal, interpretation, being, reflection, reviewing) which emerged in the learning process using group discussion. From the data transcribed, the results showed that eleven critical thinking concepts (practice, action, management, appreciation, awareness, care, evaluation, understanding, analysis, appraisal, interpretation) could be found in fifth grade students, while three of them are missing (being, reflection, reviewing). It could be concluded that the students' ability to think critically was developed after getting experiences in learning by using group discussion. However, an important factor in fostering students' critical thinking skills was teachers' involvement. Thus, teachers need to fully participate to stimulate students to express their critical thinking skills in the learning process.

Key words: group discussion, critical thinking

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# 1 INTRODUCTION

In the era of globalization where the human mindset is growing, humans are required to have the critical thinking skills to face all the circumstances occurring around them. The coming generation should be able to provide new ideas for the development of their environment. In addition, this generation should be able to find the solutions to problems found within their environment. Consequently, to overcome these challenges of the modern era, people should be ready to prepare their human minds.

Students' critical thinking skills can be formed with an educational system which guides the students to be close and sensitive to their environment. The learning process is not only concerned with things that are theoretical. The lessons given should be explored in depth and applied in everyday life. One of the learning purposes is to help develop the critical activities and mindsets of students. It should be developed as much as possible according to the abilities of each student. In this case, teachers need to provide students the opportunity to think freely in accordance with their interests and abilities. Class activities which consist of ideas will stimulate students to think critically.

The quality development of Sukma Bangsa School as written in its blueprint refers to the concept of quality assurance. A strong emphasis is given to the process, not only to results or student achievement. The quality assurance concept demands optimal participation of teachers in designing and implementing the learning process. The ability of students to take the initiative, risk, be critical and brainstorm in groups are some of the important things the quality development of Sukma Bangsa has embraced so far (Fachruddin, Kusumaningrum, Dewi and Maulana, 2005)

In the same way, Sukma Bangsa elementary school implements a thematic learning curriculum. Learning activities are carried out by incorporating material from multiple subjects in a theme. One aspect that characterizes this thematic approach is the students' skills for critical thinking developed through the activities in the learning process. The initial step of cognitive development begins in the primary school where students are still in the transition process of



changing habits from playing to studying, and thus the primary level teachers must be able to apply an interesting teaching strategy.

One method capable of attracting the students' attention is a group discussion, by which it is believed that students can interact with teachers and each other more deeply. By using this strategy, the teachers may hope that the students will follow the learning process as well. Moreover, since student ability to think critically is an objective of learning that is often expressed in primary schools (Florea and Hurjui, 2014); it is not an exaggeration to say that the teachers may apply the group discussion strategy to improve the students' capacity to think critically.

Discussion or group activity could help students to deeply comprehend a particular theme through group discussion. Thematic learning also focuses on how students actively explore the theme presented. Therefore, as classroom teachers in primary school, we aim to explore the process of group discussion, which focuses on student-centeredness in expressing students' critical thinking skills.

Previous studies by Florea and Hurjui (2014), recognized the most suitable method and procedure to develop the ability of students in primary school to think critically. They applied several group discussion strategies to observe the students' critical thinking skills. Their study concluded that application of work in small groups and active-participative methods demonstrated that students are capable of conceptualizing procedures and are able to think critically.

Study on group discussion and its relation with critical thinking skills for elementary students in Indonesia is not an extraordinary obsession. Many studies have been conducted focusing on particular lessons such as science. However, our research emphasizes identifying the emergence of students' critical thinking skills by way of group discussion in thematic learning. In doing so, this research used fifth grade students of Sukma Bangsa School in Bireuen as respondents whom we believed were the best research informants because they could be expected to answer questions of different levels of difficulty.

We can thus say that the main purpose of our research was to understand the advantages of group discussion for the fifth grade students in expressing their critical thinking. We were assured that students would learn how to argue a point of view, to follow and respect the views of other partners, by solving a problem with group members in discussion.

In addition, we had an interest to know the differences in the learning process in using the group discussion method and lecturing method related to the development of students' critical thinking skills. We assumed that lecturing can be a passive method or ineffective in fostering the important factors in student learning such as students' interest, interaction and engagement. However, in contrast, research by Collen (2009) compared two methods consisting of lecturing and group discussion in developing student ability to think critically, and they found that there was no significant difference in both teaching methods for increasing students' critical thinking ability. Indeed, we aimed to show the kinds of student's critical thinking skills emerging in discussion by observing the variety of their activities in group discussion and their worksheets.

Based on the purpose of the research as described above, the research question of this study can be explained as follows: What kinds of critical thinking arise when students learn using group discussion? How do the processes of group discussion work to encourage the critical thinking of the students?

## 2 LITERATURE REVIEW

Having an ability to think critically is the expectation from all people in the world since it can build capacity when they face problems, as well as capability of finding solutions to those problems. In order to develop critical thinking, the stage of cognitive development is important. This chapter presents the principal theory of cognitive development and the concepts of critical thinking. Vygotsky developed the principal theory of cognitive development. This theory, especially ZPD and scaffolding, are used as the basic theoretical consideration in this research.

According to Vygotsky, the concept of the Zone of Proximal Development (ZPD) distinguished between the actual development level and the potential level of the pupils (Oakley, 2004). However, each pupil would be able to develop their ability from virtual level to the possibility level at any point in time. Vygotsky thought that each pupil was able to develop their capacity during learning process if they were helped by the other experts. Those experts could support the pupils to increase their capacity in thinking critically and enhance their achievements.

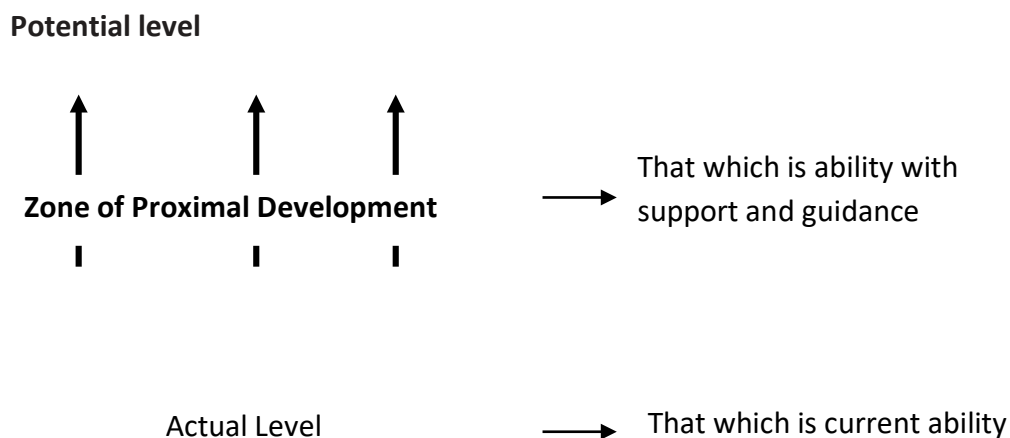


Figure1. The Zone of Proximal Development (Oakley, 2004)

According to Vygotsky's theory of the concept of zone of proximal development described, the learning happens when the children try to work and handle the tasks that have not

been studied before. But, the tasks are still inside the range of their capacity or the tasks are within their Zone of Proximal Development (ZPD). In other words, the tasks are slightly above the student's progress at that time. Vygotsky was convinced that higher mental functions mostly come up in conversation or collaboration among individuals, before the higher mental functions are absorbed into the individual. Vygotsky also differentiated child development into two aspects; the actual development and the potential development. The actual development is that the children can complete their task or work if the teacher or an adult does not help them. On the other hand, the potential development is to recognize how the children can solve the problem with support by teachers or their peers.

As teachers at Sukma Bangsa School primary level, we have applied Vygotsky's theory in our learning process for a year. It happened when the teachers provided the individual tasks for the students. Mostly, the students were able to complete all the tasks without support from the teacher or an adult. It means that almost all the students had been in their actual developmental level to facilitate their cognitive development. Moreover, the teachers also organized other methods in the learning process, such as small group discussion. By using group discussions, the students had a chance to develop their ability with the help of their teacher or classmates in a group discussion. Thus, the potential developmental level of the student would improve in this stage.

In addition, Vygotsky also described scaffolding. Scaffolding is staged when the adult provides a framework to assist the children during the early stages of children's learning (Oakley, 2004). Perhaps the children can develop their understanding with the help of adults. Then, the children take over the responsibility in another task after getting the framework. Such assistance may include instructions, warnings, and encouragement, dividing the problem into learning steps, and providing an example or other supports to allow students to grow independently.

Based on Vygotsky's theory, we can conclude that children are not ready to learn new knowledge independently. However, they must be supplied with problems over their level of cognitive development. This kind of situation will encourage their learning both in terms of scaffolds and the ZPD. Generally, the students will fail when they are beyond their ZPD. It means that they are incapable of understanding the concepts and how to find the solution for

their problems. Moreover, the negative effect is that the children will fear to try something in their future learning. Further, the expert peers giving the scaffolds support the students who are lacking abilities or skills in learning. Thus, for the students who have lower capacity it is possible to achieve the difficult tasks with the help of higher capacity students.

Besides Vygostky, we also adopted Piaget's theory. Unlike Vygostky, Piaget's theory indicates that basic cognitive development is based on three main concepts, i.e., assimilation, accommodation and equilibrium (Oakley, 2004). Assimilation means that children learn by using new experiences, and they can apply these experiences when they face new problems in another place and time. They also develop their abilities by absorbing the information needed. Accommodation means that the students have the ability to change the pattern of their existing knowledge with the new scheme. It happens if they find a new thing in the field which is different from the ones before. Therefore, they should promote a new perspective to acknowledge it. The last main concept is equilibrium. Achieving cognitive development through assimilation and accommodation is the higher process in the equilibrium step (Hummel, 1998 as cited in Oakley, 2004.) The children try to analyze and solve the problems while facing the new situations constantly. They develop their understanding, while having the challenges and conflicts with their earlier experiences. In line with that, they build equilibrium to their analysis and create a logical scheme for what they face. Moreover, the equilibrium is always being modified, because the children will have new experiences.

Based on the three main concepts, Piaget also stated that the stage of cognitive development of elementary children is at a preoperational stage to concrete operational stage (Oakley, 2004). He used the term to describe the ability of concrete operational thinking at this stage which was called "can think" (Woolfolk, A.E, 1995 as cited in Rosnawati, 2009). Characteristic thinking at the stage includes classification, association, identification, relations between two objects, and awareness of conservation.

Sukma Bangsa elementary school also adopted Piaget's theory in creating the curriculum. We developed the curriculum based on the stages of the child development, especially preoperational stage to concrete operational stage and concrete operational thinking. In the stage of implementation, for first graders up to third, they are in a pre-operational stage. Therefore, we created a curriculum to prepare the students' attitudes. Moreover, students begin concreted

operational thinking when they are in the grades four to six. They have the capacity to express their new ideas and gave reasons for many issues they face. It seems that most students in Sukma Bangsa School share the ideas that can improve their process of thinking. This will lead to their ability to think critically and thus it can become an ordinary thing for each student in Sukma Bangsa.

## **2.1 Critical Thinking**

In the modern era, thinking critically has become the biggest issue in the education sector. Every teacher is attracted to teaching critical thinking to their students. A specific rationale of education to teach critical thinking is to prepare the students to better face problems in the future. "It is strange that we expect students to learn, yet seldom teach them anything about learning" (Norman, 1980 cited in Schaferman, 1991 p. 1). "We should be teaching students how to think. Instead, we are teaching them what to think" (Clement and Lochhead, 1980 as cited in Schaferman, 1991 p. 1)

Considering two quotations above, critical thinking could not be taught in the learning process suddenly by teachers. However, all learning consists of distributing to students two different things: first, "what to think" which means the subject matter or discipline content of the course. The second is "how to think", in order to gain the correct way to know and assess the subject matter (Schaferman, 1991). The teachers do remarkable work to distribute the subject matter content related to the teachers' own education. In line with that, the students frequently refuse when the teacher guides them on how to think effectively in the course of the study. The students themselves should therefore be able to understand and evaluate the subject matter. As this ability is called critical thinking, these skills have been reported as the most difficult part of all educational disciplines.

Critical thinking is one of the basic skills that promotes the learning environment as an interesting action, various methods in teaching and learning are used, relying on conditions of pedagogic factual and development stages in thinking critically (Florea and Hurjui, 2014). According to Florea and Hurjui, critical thinking is a step to approach and to solve problems based on thinking in a way which is persuasive, logical and gives rational arguments. This step is implicated to verifying the data, evaluating the process and choosing the appropriate answers to the task that has been given. In line, the students should properly reject the answers

that they think are incorrect, and then provide other alternative solutions by giving rational reasoning. They also stated that thinking critically is an active, conformed, and complicated process, such as reading and writing, speaking and listening, which includes the way of thinking to accumulate the knowledge in the beginning and closes with a good solution. In addition, they also described that thinking critically is a result that can be obtained by someone's own thinking. Everyone has critical thinking for the basic step of associating the new concept with other input.

One of the important aspects in the activity of thinking is thinking critically (Moon, 2004). It is a way of learning to produce new knowledge by processing existing knowledge and previous ideas. Therefore, the students can increase their ability in thinking critically during the learning process by using their activity of thinking, i.e. analysis, understanding, interpretation and so on. Moon (2004) also explained that thinking critically is the capacity to examine the information from many sources. This information would be processed in a creative and rational way. It also will challenge, and will involve analyzing and making conclusions. Thus, the result can be defended and justified. Because the context and its meaning always change, the knowledge has to be constructed.

According to Siegel as cited in Mason (2008), in the component of critical attitude:

One who has the critical attitude has a certain character as well as certain skills: a character which is inclined to seek, and to base judgment and action upon, reasons; which rejects partiality and arbitrariness; which is committed to the objective evaluation of relevant evidence; and which values such aspects of critical thinking as intellectual honesty, justice to evidence, sympathetic and impartial consideration of interests, objectivity, and impartiality. (Siegel, 1990, p. 39)

Language becomes significant when critical thinking is described in the written or spoken form (Moon, 2004). Besides, the emphasis on the role of language in critical thinking is not always clearly shown in the learning process. Regardless of its concern, it must be seen as highly important in any critical thinking. The students express their ideas in communication with others. Thus, they can convey what they are thinking correctly or incorrectly, clearly or not clearly, filled with assumptions and so on. Generally, some students may be more confident to express their ideas in writing rather than through speaking. Students who have common vocabularies are able to complete the tasks (Oakley, 2004). Vygotsky thought that there is a correlation between language development and cognitive development (Oakley, 2004). Therefore, the teacher should

apply a good learning strategy to increase students' ability in speaking. Group discussion is a way to construct their ability in speaking, because the student can deliver their thinking to their classmates during discussion.

### **2.1.1 The Activities of Critical Thinking**

Thinking critically might be having the same meaning with any other thinking, but it increases the level of students' competency (Moon 2004). In Moon's study, many critical words were involved in categorizing and representing critical thinking. The students mostly used the critical words during the learning process in the class. Moon (2004) also described some words to map the activities of critical thinking that students and teachers had used. The words are understanding, reflection, appraisal, review, analysis, interpretation, evaluation, appreciation, management, awareness, care, being, action and practice. We adopted all these critical words in mapping our data.

Based on the research conducted by Moon (2004), there are several activities of critical thinking assumed by the teacher. However, the ideas might be different based on different activities and dissimilar teachers who apply them. Below are several activities of critical thinking, for example:

*Firstly*, review of others' arguments. In this case the task of the critical thinker is to review the process of developing an argument and the process of reaching a conclusion. The students review someone else's arguments when they discuss in groups, such as during speaking and writing to complete the task.

*Second* is the evaluation of an object. The students should think critically in forming an evaluative judgment of an object, such as a work of art, a form of task presentation, and so on. In this step, the critical thinker must think creatively. Furthermore, they can evaluate an object that has been developed by others.

*The next* activity of critical thinking is the development of an argument. In this step, the argument is built by a critical thinker, such as preparing the presentation with his/her own words, reasoning and decision making. However, the students often face issues when presenting their arguments, especially a lack of structure in writing or speaking. Further, the student should use this process in other tasks that will they do.



*Fourthly* is critical thinking about oneself. This term is often expressed as well-known learning reflection or reflecting critically, (Brockbank and McGill, 1998; Fisher, 2003 as cited in Moon, 2004), even though it could be focused on activity by improving the new idea. Because the self is connected to any other forms of critical thinking, the issues relevant in critical thinking about the self can be a part of other forms of thinking critically.

*The analysis of the case* is the next activity of critical thinking. The teacher often demands that the students think critically about what is happening during the learning process. The purpose of this step is to involve the students in reviewing their activities and thinking how matters have been managed by them. Moreover, it will consist of thinking critically about self. As a result, the students become more reactive to every single event that happens to them.

*Finally*, there is participating in developing answers to the arguments of others. The students who participate in arguing with their mates' opinions perform the next action in thinking critically. Here, the students must think deeply to examine the background of the argument and how to respond to it. In addition, they can respond to the argument by speaking or writing. In other words, the student can use many ways to present their opinions.

Phillips and Bond (2004) as cited in Moon (2004) also explained about critical thinking from the students' perspective. Below are four categories of what critical thinking from the perspective of students is about:

*First* are the students who see critical thinking as critical reflection. It means that the students in this category notice a critical reflection as a problem of forming a common judgment such as good and bad, clear and unclear and so on. The *second* category is viewing critical reflection from every aspect. Mostly, the students think critically when they get a problem. Then, they solve the problem by looking it from every aspect: for instance some of them assume the solution based on what happened before. Sometimes, they also take the part of a person who has a problem; for example, if I were him maybe I would do something. *Thirdly* is reviewing a previous circumstance. Generally, the students are asked to remember what they have done before by the teacher. While in this situation, the students can think what they should do in the future. Hence, they learn from the problem they were facing before. *The last* is viewing from outside the box. This means the students express their thinking critically by using their own beliefs and values to solve the problem. They try to think and view from outside the box. In other

words, the students create their decision without any influence from others. Therefore, they become familiar with the context of the condition, where it happened, and how the people were involved.

## **2.2 Group Discussion**

A thematic curriculum needs a creative teacher in preparing learning activities for students. In line with the modern learning approach, thematic learning puts students as the subject of study while teachers act as facilitators who provide ease to students for learning activities. In accordance with the characteristics of thematic learning, the learning process consists of a variety of activities with multi-methods, for instance, experiments, role playing, discussion and demonstration. Consequently, students should be ready to follow these activities actively whether individually or in a group.

Group discussion is a technique in which students work together in small groups to reach the same purpose. Small group discussion, which usually consists of four or five students, is regarded as a potential solution to modify the format of large classes (Jones, 2014). The researcher said that group discussion is a “circle of knowledge” meaning working in a team to discuss the lesson collaboratively in a circle position. Students work together in order to develop anything that did not exist before the collaboration (Peters, Joseph and Armstrong, 1998). In conclusion, the purpose of the collaborative learning concept as well as the grouping and pairing of students’ is to achieve an academic goal. Matchett (2009, p. 27) described that:

Cooperative learning—which may also be called “collaborative learning,” “small group learning,” “team learning,” or “peer learning” (Sweet and Svinicki 2007 cited by Matchett, 2009)—refers to the use of highly structured, interactive exercises that have been carefully designed to hold each participant individually accountable for contributing to a larger, complex learning goal, while also making all participants jointly responsible for integrating the learning of every other member.

Several previous studies have showed that using small groups has a positive result on the learning process (Roseth, Johnson and Johnson, 2008). Group discussion provides emotional, intellectual and social purpose. Hill (2000) as cited by Mohammadjani and Tonkabun (2015) argued that teachers need to teach students social skills. It is supported by Orprayoon (2014) who said that the cooperative learning method develops good social skills among students, in which

they will learn and encourage each other through group working. In line with Ebrahim (2010), learning cooperatively is expected to have a positive effect on social, motivational, attitudinal and achievement goals.

Burke (2011) stated that an important focus in pedagogical change is active learning, which consists of collaborative learning or small group work. According to Beebe and Masterson as cited by Burke (2011), the benefit of group discussion is that it provides more information, and greater resources from different backgrounds and experiences. Moreover, group discussion can stimulate creativity and foster students' comprehension. A learning method which promotes elaboration, such as collaborative work, could improve the academic achievement of the students (Blankenstein, Dolmans, Vleuten and Schmidt, 2011).

On the other side, learning by using the group discussion method is related with the teacher-student relationship. According to Liberante (2012), the emerging bond among teacher-students becomes the potent element in the process of learning. Hughes and Chen (2001) p. 278 stated that supportive and positive relationship between teacher and students ultimately promotes "a sense of school belonging" and encourage students to "participate cooperatively in classroom activities".

Furthermore, group discussion provides the opportunities for students to involve themselves personally in the topic they are discussing. Dixson (1991) agreed that group discussion which involved students with diverse abilities will allow different learning styles. They also become aware of the diversity of opinions on a certain topic, because in group discussion, students also should accept differences in perception, race and gender (Brewer 1997). First and most importantly, the differences among students in collaborative learning allow for the diffusion of new ideas and attitudes.

Working in groups will help students build their interpersonal skills and confidence about offering an individual opinion in a group atmosphere. Dubois (1979) as cited by Dixson (1991) stated that the use of group discussion raises the students' motivation. For these reasons, work in group is the most popular method used by elementary teachers of Sukma Bangsa.

Nevertheless, when applying interactive learning activities such as group discussion, teachers are required to prepare in advance the issue to be discussed and must master it. Teachers also need to provide opportunities for students to express their experiences, opinions and criticisms. Indeed, teachers' creation in designing the activities in conducting group discussion is

very prominent. It influences the quality of students' interaction and their perceptions toward instruction in a group discussion. A study by Corden (2001) indicated that when students in a group understand the collaborative ground rules, they will reach the discussion mission.

Corden (2001) argued that if the students understand the regulation of cooperative learning, they can control the obstacles they have based on their prior experiences about the benefits of working individually and producing personal outcomes. In this case, teachers should promote an exclusive way when establishing the contexts of collaborative learning to overcome the students' perceptions of the need to work individually.

However, there are several weaknesses of group discussion. For example, a discussion can be dominated by two or three students who have a good ability to talk. Sometime, discussion processes appear to be off topic and the conclusion becomes unstructured. On the other side, students may need more time in discussion which is not in accordance with the plan. Also, in some cases, uncontrolled arguments will cause group members to feel resentment so that they can disrupt the learning atmosphere. Beebe and Masterson as cited by Burke (2011) confirmed that including the various opinions is a pressure in group work. The other weakness of work in groups is that some members are dependent on others. Thus they are not fully engaged to complete the discussion task. In order to avoid these kinds of weakness, the teachers should assign specific responsibilities to each member and ensure that every group member is aware of the objective of the group discussion (Burke 2011).

### **2.2.1 Variation of group discussion**

Discussion in the group is one of the teaching strategies applied by the teachers involving the interaction of some students in a group to share ideas and information to solve a problem. Brewer (1997) stated that the variation of small group discussion consists of cooperative learning groups, problem solving, and group investigation.

In cooperative learning, students work together to reach a common purpose in a small group. This method fosters cognitive development, in which students achieve more in group working. It also supports positive interdependence, face to face interaction and individual capacity within the group.

A problem solving group exists to cooperate, discover, inquire and think critically (Brewer, 1997). For example, students work together to solve a mathematical problem through exploration. Brewer also explained that the purpose of the problem solving group is to provide a real-life problem with a suitable solution. It will help students in making responsible decisions and build logical solutions to their problems.

Group investigation as described by Brewer is one of the group discussion types in which the teacher breaks students up into small groups based on particular interests. This method requires each group to have a certain category on which to gather information, and to analyze it for meaning. Furthermore, students prepare and deliver a presentation to the class about what they have discussed. This process will teach students to have group-skills, such as working together, listening to one another, and supporting each other's work and opinions.

### **2.2.2 Steps in conducting group discussion**

Rationales of discussion in a small group are to subscribe and distribute the knowledge on a certain theme. It is followed by analyzing and evaluating the information for supporting evidence to attain the conclusion of discussion (Brewer, 1997). Therefore, to accomplish these targets, Brewer described several steps that must be taken into consideration when conducting a small group discussion.

Firstly, an introduction; the student who becomes a presenter must prepare for the discussion to be successful. The presenter should try to introduce a topic on which all of the other participants have some background knowledge so they have a basis for discussion. In the same way, the argument conveyed by a student will get feedback from other members. Due to the fact that discussion can work as a place for students to train themselves to think logically, it can thus function to improve their thinking ability in solving a problem.

Secondly, directing the discussion; a student in the group is in charge of directing the discussion to get it started. He or she can begin the discussion by asking other students to recall and share personal events that have happened in their lives related to the topic. This is a suitable approach to get everyone involved. According to Brewer (1997), questions are also excellent motivators for discussion. This is in line with Shahril's explanation (2013) that teachers usually ask questions in the class verbally or in written form. Shahril also agrees that questions can

stimulate students' thinking skills, investigate if students understand the lesson and questions, and help students and teachers to learn from each other. In addition, the passive participants can be stimulated to actively talk by moderators or other students. All of the group member should be given the same opportunities to present their ideas.

The last step is summarizing the discussion: making a conclusion in accordance with the results of the discussion. It is important to summarize to make sure all group members understand what has been discussed, reviewing the discussion by asking the opinions of all the participants as feedback for further improvement.

In this case, it is the responsibility of teachers to guide the students to reach the discussion goal by following several steps that must be taken into consideration when conducting a small group discussion as discussed above. Nevertheless, primary teachers still find it difficult to direct students to follow the steps above. Although during the discussion teachers always try to manage students to be focused on learning activities toward topics or issues discussed, some of the students often disrupt the atmosphere of discussions with their ridiculous actions.

### **2.3 Group discussion and its implementation for critical thinking**

In everyday life, both in the family and society, everyone is faced with problems that require decision making. Sometime, the problems they face cannot be solved individually. Therefore, it needs dialogue with other individuals associated with the problems to find the solution. In short, the process of problem solving is related to the discussion.

A learning process has many goals to achieve. It is not limited to knowledge, but includes also the formation of skills. Thus, the learning process requires learning models that can involve students' potential optimally. Teachers have applied many teaching strategies appropriate to their own needs and their students' needs. Numerous teaching methods have been recommended to support the improvement of students' critical thinking skills (Lee, Parsons, Kwon, Kim, Krassie , Jeong and Ryu, 2016). Dixson (1991) stated that even though many teaching methods can be found in learning activities, a well-known one is problem solving in small groups. Indeed, Johnson and Johnson as cited by Dixson (1991) verified this approach in facilitating critical thinking skills. They also pointed out that cooperative group learning tends to promote more learning. The strategy of learning through problem solving in a group educates students to solve

problems gradually. Problem solving strategies also trains students to identify, analyze and evaluate the problems carefully, so that students can develop the power of reasoning critically to solve problems.

Students can learn many things which can help in improving their critical thinking skills through group discussions. Dikici and Yavuzer (2006) as cited by Karami, Pakmehr and Aghili (2012) considered that, compared with individual activities or competition, the outcome of learning collaboratively is better. In addition, previous researchers' findings have exposed that in the higher education system there is a positive result of collaborative methods on the cognitive levels of the students and their abilities to learn (Jacobs, Ott and Yvonne Ulrich, 1997, Celuch and Slama, 1999 cited by Karami *et al.*, 2012).

Moreover, critical thinking skills are associated with problem solving or collaborative learning. This is because the ability to think critically affects all forms of communication, including speaking, listening, reading and writing (Macknight 2000). On the other side, appropriately structured cooperative learning provides continuous support and advice from other students and the teacher that fosters the student to show their critical thinking skills (Cooper, 1995). Nelson (1994) argued that critical thinking skills in collaborative learning could modify the education to become more effective than individual learning. Students in a group learning environment are doing and learning everything together. At the end of collaborative work, all of the group members must be able to demonstrate the discussion product. Students require the ability to think critically in order to be able to deliver the things that they learned ethically (Matchett 2009).

Students' ability to think critically can be developed through collaborative learning. The implementation of the group discussion method emphasizes students' mastery of the concepts of the material to solve a problem through a process of critical thinking, self-confidence and the ability to interact with friends and the social environment. Harter (2009) believed that critical thinking should be collaborative due to three things, as follows: Firstly, many critical thinking skills are shown by students in a collaborative activity. Secondly, working in groups is an instrument that facilitates students to learn how critical thinking skills can be improved. Lastly, critical thinking in collaborative learning teaches students to respect each other as an ethical value. In addition, Davidson and Worsham, 1992; Klimoviene, Urboniene, and Barzdziukiene as cited by

Fung, To and Leung (2016) argued that there are satisfactory data to support that work in groups is valuable in improving students' ability to think critically.

Furthermore, critical thinking skills should be developed in all subjects. By using the discussion group strategy, students can show their ability in critical thinking by explaining what they think. Studies by Gokhale (1995) reported a statistical analysis on the test scores on students' participation in collaborative learning. The result shows that students who were involved in group learning had better performance in a critical thinking ability test compared to students who worked individually. This is in line with the research by Sanasuttipun et al (2009), which found that small group discussion can improve students' critical thinking skills, self-directed learning, and learning satisfaction.

According to Bonwell (1991) as cited by Prince (2004), discussion is one form of active learning which is better than lecturing in explaining the material, motivating students and developing their thinking skills. Studies by Galton *et al.*, (2009) also have demonstrated the advantages of collaborative work to support the interaction at a high cognitive level compared to lecturing of the whole-class. As stated by Sanasuttipun et al (2009), students' critical thinking skill decreases when applying the lecturing method. Additionally, Vygotsky (1978) cited in Sanasuttipun *et al* (2009) contended that when instructed to work in collaborative situations, students perform at higher intellectual levels than when instructed to work individually. In agreement with Saiz, Rivasand and Olivares (2015), an instruction design that addresses the factors that really induce change can improve the critical thinking skills.

Furthermore, Jones (2014) said that discussion is known as a learning strategy which provides for students' interests, engagement and interaction. Indeed, when students are well structured in a discussion, it can give them more than just a chance to express their personal opinions. Discussion facilitates students to correlate and develop new ideas. Subsequently, students can struggle with different perceptions from their peers and apply the solution to a problem collaboratively.

The diversity of knowledge and experiences in a group assist positively to affect the process of learning. According to Bruner (1985), problem solving strategies can be improved through cooperative learning in which group members faced is similar explanations in a set condition. Endorsement from group members facilitates students to create intellectual functioning tools from transformation of knowledge and critical thinking ability.



Confirming Ahlfeldt et al, as cited by Lok-Fung (2006), using group activities or discussion can encourage improvement of students' learning outcomes. Moreover, students get the opportunity to increase their understanding, critical thinking and team work skills. They also experience the exposure to different perceptions and maturity in listening and communication skills. Students will be satisfied with the skills which develop during collaborative work and will reach better final exam performance.

Florea and Hurjui (2014) stated that studying in groups or in pairs can develop the ability to think effectively. However, collaborative working will be effective if there are respect for an idea, creation of the conclusion from assumptions, and ethical aspects, consisting of behaviour and attitude. In addition, the critical thinking skills which are practiced in the discussion will develop communication ability and capacities of understanding the transformation of knowledge. Fung and Howe (2014) also agreed that the conversations among students represent that they have learnt about justifying arguments.

As previously discussed, the enlargement of students' ability to think critically is an essential goal of education. In agreement with Tan, Turgeon and Jonassen (2001), problem-solving is one of the group discussion types that have been included as an important part of school curricula. Through group discussions, students can learn to become critical thinkers and good problem solvers.

Additionally, students' critical thinking skills can be found when they are working in groups for fun activities. Findings by Gossett and Fischer (2013) revealed that creating a game to engage students in completing exercises is fully enjoyed. This kind of activity allows the chance for students to explore their creativity and cooperation among their friends. It also gives a positive effect on students' focus in understanding using either verbal or written skills.

On the other hand, Lee, Parsons, Kwon, Kim, Petrova, Jeong and Ryu (2016) stated that interrelationship in cooperative work is needed for effective cooperation. For example, if student A does not collaborate with student B, student B can reprove student A to be more cooperative. However, it is not enough to develop students' critical thinking skills. In team work learning, the students do not have all the items of knowledge. Generally, they are asked to study a particular item of knowledge, and to discuss and formulate the conclusions together in team work-based learning. In this learning design, the students do not have all the items of knowledge (Lee et.al, 2016).

Other previous research reported that students who are actively involved in discussion of problem-based learning do not have better performance compared to students who follow the learning from the lecturing method, because the lecturing method is provided over a longer period of time enabling students to retain more knowledge. This is a unique finding, since it suggests that the students' learning process is not influenced by the effect of group work (Capon and Kuhn 2004; Dochy et al. 2003; Eisenstaedt et al. 1990; Tans et al. 1986 cited by Mercer).

On the other side, Mercer (2008) stated that by using classroom dialogue as a tool for reasoning, teachers play an important role in developing students' critical. It means the teacher's contribution in the learning by group discussion helps students to promote their ability in critical thinking. This is supported also by Gokhale (1995) who argued that the exchange of thoughts in the groups in collaborative learning fosters students' critical thinking skills and their interests. Cooperative learning provides opportunities for students to become critical thinkers through participation in groups and to be responsible for their learning (Totten, Sills, Digby, and Russ, 1991 cited by Gokhale, 1995).

However, on the contrary, Ristiasari, Priyono and Sukaesih (2012) explained that teachers were more focused on the aspect of knowledge and understanding of concepts than in training students to be active in thinking. Consequently, students lack the ability to think for solving problems because they more often memorize concepts without knowing the process of finding a concept. In fact, giving problems to solve will support students to be more active in learning, to understand the content of learning, to challenge students' thinking skills to solve the problems, and to find the right solution. Fung and Howe (2014) however stated that study on the roles of teachers in group work is a thriving thing.

The reality shows that the progress of critical thinking skills is desired in education outputs. This desirable result demands the teaching strategies which assist the students to increase their skill to think critically and improve the trend of utilizing the skills (Lampert, 2006 cited by Karami , Pakmehr, Aghili (2012). Karami et al (2012) stated that teachers believe that students' critical thinking can be trained by using appropriate teaching methods. However, in practice the effort and motivation of students to think critically is not enough. The tendency of the students to think critically is influenced by teachers' understanding of suitable teaching methods. Collaborative learning has an important effect as a teaching method. Through this

method, students share their knowledge by way of cooperating with each other. They may develop several of their abilities in the groups (Jacobs *et al.*, 1997 cited by Karami *et al.*, 2012).

## **2.4 Critical thinking in elementary students**

Kettler (2014) stated that only a small number of researchers have observed critical thinking skills among the elementary student population. Generally, the literature on critical thinking focuses on older students, such as college students. Previous studies by Kettler (2014) identify that there is a relationship between critical thinking and the cognitive ability of the students. The results of his study also prove that the development of students' critical thinking ability exists in early fourth grade. Related to this case, Piaget's theory of cognitive development stated that the cognitive maturity of children is divided into different stages. Their brains develop through the natural process of maturation which influences their understanding about the nature of and their capabilities to analyze the current development of the world. However, Piaget also considered relations with the environment as a vital aspect in cognitive development (Oakley, 2004).

Students who participated in our research were 11 years old. As described in Piaget's theory, students around 7-12 years old are in the stage of concrete operation. In this stage students have capabilities to talk about amount, length, number, liquid, weight, and by the end of this stage they are able to complete the whole conversation (Oakley, 2004). In addition, students at this age initiate to apply their skills to create regulations and apply them to settle their problems. For example, a student gets stomach-ache because of missing his breakfast then the next day he will remember that breakfast will prevent him getting stomach-ache.

Furthermore, cognitive changes will allow the development of critical thinking among students if it is trained from an early age. It will be seen from the increasing of the speed and information processing capacity. The success of students in mastering the basics of critical thinking skills at the age of primary school will affect the developmental stages of adolescence. In the other words, the academic success of a student in higher education is largely determined by his/her success in academic activities or learning processes in primary education. Therefore, critical thinking is considered as a skill that should be trained in primary school so that its benefit will be felt by students when they arrive in higher education. If the students' ability in problem

solving or decision-making has been trained in the education in elementary school, they will be better prepared cognitively when given more complex problems in the future.

A previous study was reported by Malamitsa, Kasoutas and Kokkotas (2009) who observed the improvement of students' ability to think critically in science in upper grades of elementary schools. It suggested that the improvement of students' ability to think critically and meaningful learning can be reached by creating opportunities for students to engage with parts of science. In fact, the ability of the students to think critically is not the direct result of specific subjects, such as mathematics or social science. Students do not automatically have this skill. It is a skill that must be taught by teachers. As stated by Massa (2013), numerous studies of critical thinking have proved that the ability to think critically can be taught. This suggests that teachers, who have a function as facilitators, motivators and evaluators, should be competent in fostering students' critical thinking skills.

As with other skills, students need to exercise repeatedly, even though this skill is part of their way of thinking. Students need learning strategies focusing on student-centeredness. In addition, teachers' help will motivate students to develop their critical thinking skills through learning activities. A previous study by Florea and Hurjui (2014) concluded that through applying active-participative strategies and working in groups primary students are competent to develop critical thinking skills.

Alternatively, Massa (2013) argued that critical thinking may be located in the elementary curriculum. Equally, several recent studies reveal that primary school students have similarities with adults in parts of the cognitive process (Massa, 2013). Because of that, students in primary school have the capacities to understand critical thinking instruction. They are able to show several critical activities such as for caring each other, and awareness and showing appreciation for their friends' performances. This same reality is mentioned by Bailin as cited by Massa (2013); that instruction of critical thinking for primary students consists of teaching them to assess the facts, open-mindedness, respect for their friends and willingness to perceive things from their friends' points of view. On the other side, students' ability to share the knowledge provides opportunities to be involved in discussion and become critical thinkers (Totten, 1991 cited by Hilvano, Mathis and Schauer, 2014). However, the critical thinking skills of primary students are still limited and will improve with age.

Moreover, grade five students, as found in Sukma Bangsa School, were able to work on inquiry related to a lesson. Students were capable of being engaged in reading books individually or with partners. Many of the upper primary students had the ability to ask questions either with teachers or friends if they found certain difficulties. Additionally, students also showed their ability to comment on the things which happened around them. Most of them had been able to develop their own arguments in following the learning process. On a particular theme, students gathered in a group and participated in discussion or collaborative activities. Students' conversations in a group guided them to integrate their knowledge and experience to complete their discussion task. It was therefore evident that fifth grade students were showing their ability to think critically.

Barnes (2010) described that classroom behaviour consists of three classifications of the Taxonomy of Educational Objectives. The first is analyzing. A fifth grade student is capable of grouping an object conforming to an accepted criterion. For example, the student is studying by using a form of guidelines in completing their task (problem background and purpose). Further, the students also identify the steps in the process. Finally, they decide the relevance of learning to their daily lives. The second is synthesis. The students in fifth grade have learned to build a hypothesis that may be used to express a phenomenon or produce a solution. The third is evaluation. The students try to judge the properness of particular actions in many situations. Further, they also evaluate the relationship between a specific behaviour and a specified value.

This is related to Barnes (2010), Bloom (1974) as cited in Garside (2008) who identified that the basis of the critical thinking concept is one of skills to think at a higher level. The skills to think at a higher level consist of analysis, synthesis, and evaluation. Moreover, it is useful to develop the cognitive process of the students when they think critically to analyze the object, to give an argument, to connect with the issue, to share the information and to create a logical conclusion. Generally, the theory of Bloom (1974) showed that the students who can analyze, synthesize and evaluate well are those who have the skills to think at a higher level. Bloom (1974) also said that to obtain the best achievement, we need to address that learning rationally is a process, not just a result. Further, this process needs to involve the skills of thinking critically from the student.

Students who have critical thinking can think for themselves (Schafersman, 1991). Further, they can recognize the problems, accumulate closer information, and analyze

information in appropriate steps, and decision-make by themselves, without depending on others to do this for them. Thus, thinking critically allows student to face and understand reality by obtaining reliable knowledge around them. In the future, the students will be able to survive and achieve success in their lives as well as be good problem solvers. We can say therefore that learning critical thinking has good reasons for each student.

Additionally, critical thinking in the fifth grade can be promoted by asking them questions. For example, the teacher could ask students to write evaluation papers on the most interesting things they learned in class today, and what single thing they still feel confused about. They would complete this activity after the learning process, but before the class ends. The teacher then gets feedback about the learning process, especially about what the students have learned and what they still need to know. Further, it helps the teacher to organize his/her strategy in teaching and makes it easier to conduct classroom assessment. Also, in this way, the students can improve their skills in writing and critical thinking.

The other thing to improve the critical thinking of the students in grade five is to encourage them to ask questions during learning process in the class. The teacher should respond positively to their questions at all times, without forcing the students to a certain extent and giving punishment for their mistakes, so as to make them express their ideas easily and freely. Thus, the students' questions can be seen as their process in developing their critical thinking about what they have said (Schafersman, 1991).

Based on the information discussed in this literature review section, generally we conclude that critical thinking skills can be developed through several types of group discussion. Figure 2 illustrates the development of students' critical thinking skills through group discussion. If the processes are well regulated as described in the steps of conducting group discussion, students will have the same opportunities to express their critical thinking skills. Because working in groups is an excellent tool for reasoning, which can foster the ability of students to think critically, they will learn many things to improve their critical thinking skills through group discussions.

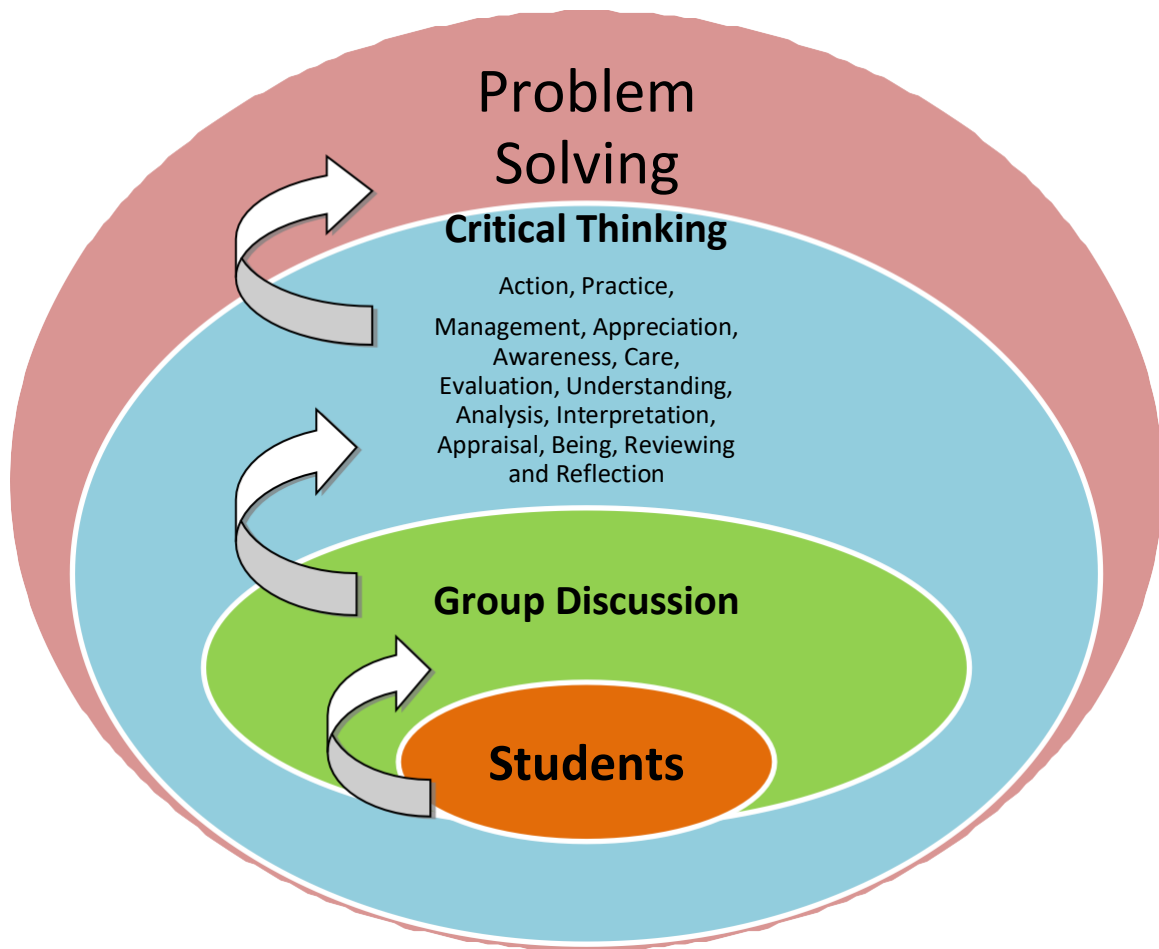


Figure 2.Theoretical framework

Additionally, students will be familiar with expressing their ideas and trying to solve problems within their community using several alternative ideas. They will be more critical when deciding on solutions, thinking deeply to analyze and evaluate the issues and feel free to share their opinions. On the other hand, they can respect others and take a part in collaborative work. Students would usually be honest and appreciate others' opinions. Therefore, they will be able to survive when facing problems in their society later.

# 3 METHODOLOGY

This study was conducted through a qualitative approach organized in the natural setting situation. In this research, the process of understanding and interpretation of the meaning of students' activities in certain circumstances was based on the perspective of the researchers. This research process received permission from the school principal before the researchers accessed the classes which were the targets of research. Two classroom teachers agreed to participate in this research by allowing us to observe the teaching and learning process in their classrooms. All students from fifth grade A and B had been informed that they would become participants in this observation. Both students and teachers agreed to be recorded and photographed. Furthermore, the observation results were used to identify the critical thinking skills which emerged in the group discussions of the fifth-grade students in Sukma Bangsa Bireuen Elementary School.

## 3.1 Research questions

1. What kinds of critical thinking arise when students learn using group discussion?
2. How do the processes of group discussion work to encourage the critical thinking of the students?

## 3.2 Participants

As mentioned earlier, the participants in this research were students from the fifth grade of Sukma Bangsa Bireuen primary school, who were 10 - 11 years of age. The students who participated in this study consisted of two classes (5A = 26 students and 5B = 24 students). They were asked to participate voluntarily, anonymously, and with confidential evaluation of their participation. They were told that they would be asked to participate in group discussion during the learning process. Furthermore, they were informed that all of their activities in group discussion would be recorded using a digital camera. The students were also assured of their



independence when conducting the discussion, and there would be no penalty for those who chose not to respond. Agreement was implied with their participation in the learning process.

According to many researchers, children at 11 years old begin to reason abstractly (Atherton, 2009). Children around this age are at the stage where they are emotionally, socially and intellectually developing (Wood, 1998 cited in Lok, 2012). Emotionally, students at 11 years of age are friendly and agreeable; they are cooperative and malleable in building social relationships. In social aspects, they do not want to stand alone in competition. Therefore, they are more inclined to be a part of a group. Intellectually, eleven-year-old students are challenged in making ethical decisions verbally. They have the ability to express ideas and feelings in creative ways. Students will develop more confidence in choosing to answer questions that require creativity, imagination and critical thinking skills through exposure to questions that differ in cognitive skills. It seems viable therefore to select grade five students in this study to see whether they could be expected to answer questions with different levels of difficulty. It is hoped that the study will help teachers to apply group discussion, which can serve as an intervention strategy to enhance the emotional maturity of the students.

We used observational methods to find answers to our research questions. In the field, we recorded all the activities during the learning process in the classroom by using a digital camera. We also noted the students' communication in each group using the recorder. We observed the process of group discussions in two classes of the fifth grade at Sukma Bangsa Bireuen. We always gathered in all activities during the observation process, as this was helpful to compare and share the information that we got in the classroom. We had told the students about our research and that we would record all their activities while they followed the learning process.

After doing the observations, we discussed and shared the information that we got based on our notes. When transcribing the data, each of us was responsible for one class. We transcribed the video verbatim, which was beneficial in providing all the data needed. Then, we compiled our verbatim transcripts to assure our perception when organizing the data. Finally, we used the same concepts to categorize or theme our data. Practically, the researchers had to look back to the data transcripts when writing the findings and discussions. It was helpful to check the match between the data and the findings.

In class 5A, we observed the learning process for about 105 minutes or 3 x 35 minute lessons. The class leader led his friends to get ready when the teacher came to the class. Then the leader instructed all students to sit neatly. It is the students' everyday habit prior to the learning process beginning that they would read a prayer in the morning class. The teacher asked about the students' condition in the opening. Next, the teacher told about the topic of the lesson: Indonesia's Strategies in Overthrowing the Colonizers. Then, the teacher separated the students into small groups (three to four students in each group) counting them one by one. Students who got number one would be in group one, number two would be in group two and so on.

In the next stage of the process, the teacher provided the reading material for each student. The teacher then asked a student to read the reading material aloud, while others were asked to listen carefully to their friend reading the material. After that, the teacher explained about the reading material and the purpose of the lesson for the day. The teacher also provided extra time to ask some questions if the students did not understand the reading material. Later, the teacher allowed the students to start working in group discussions. The students had to answer all the questions from the reading material by discussing in groups. Moreover, the teacher always supported each group by giving suggestions or feedback on their task. Also, the students could ask for the teacher's explanation by asking the teacher to come to their group.

The results of the group discussions were written on paper with the registrar. Furthermore, each member of the group took part in preparing their presentation to the class. The teacher reminded them that the time for group discussion was over, so each group had to proceed to the presentation time. Then, the teacher asked if any group would like to start the presentations. Some students raised their hand to give a response, in order to present their results in front of the class. As each group finished presenting their result, the teacher and other students gave appreciation by giving applause for the group's performance. Finally, the teacher conveyed the conclusions and lessons that can be drawn from their group discussions. Before closing the class, the teacher asked the students to write their reflections for the day. The students wrote around one to two paragraphs about their feelings during the learning process. The teacher then expressed gratitude for the students' attention. The class was closed by reciting the closing prayer.

In grade 5B, the classroom teacher opened the class by engaging the student in an ice-breaking chat in order to make the situation in the class more cheerful. First, the teacher asked who was absent from the class and what the reasons were. The teacher then explained about the topic and the purpose of the day's lesson. The topic was creating the steps of making a TV advertisement; and the teacher then wrote the topic on the whiteboard. Here, the students had to create the steps of making an advertisement and prepare a role play in front of the class, and they had to work in groups. In the next step, the teacher gave information about the students' task for the day. He separated them into five groups. Each group consisted of four or five members as one student had not come. He reminded all the students to endorse whoever was willing to join their group. Furthermore, the teacher mentioned each member and group name, and then asked each group to sit at the desks assigned before. When the students came to their group, the teacher gave a form, which all of them had to fill out in their group. Each group got one form, a task paper, which contained the steps in creating a TV advertisement.

The teacher ensured that each group had the product that would be advertised. The responsibility for each group was to mention the kind of product that they chose, such as a soft drink, biscuits, perfume and so on. After all the groups were ready in their places, the teacher started to explain about the form. Firstly, the student wrote the name of the group members, secondly they put the name of product. Thirdly, the student wrote the background of the advertisement at the beginning. Further, each group had to complete all the steps in the form task. Finally, the students had a chance to ask questions if they still misunderstood the task. Besides creating the steps of an advertisement, the students also prepared role plays for their advertisements. To do so, the students had around 30 minutes to discuss with their group.

During the group discussion process, the teacher always supported the students by giving feedback. He walked to each group to assist them, or the students could ask or call him if they needed any help or suggestions. After 30 minutes, the student began to prepare their role play. They divided the roles in the advertisement to all members of the group. After preparing the performance for 15 minutes, all students proceeded to begin their presentation. The teacher asked which was going to be the first performance in front of the class, and the group's role plays then commenced one by one. The teacher and other students appreciated every performance by giving

applause. And finally, the teacher gave feedback to each group by explaining the strengths and weaknesses of their performance.

On the other hand, we also observed the lecturing process in both of the fifth grade classes. The aim of this observation was to provide us extra information before analyzing the data, as the information from the lecturing classes was used as secondary data. We also found some difficulties during the observation; a number of students from another class entered the observation class and interfered in the situation. They were interested to know what was happening in our class when they saw the digital camera standing in front of the door. The other problem was the loud noise from the outside. The sound disturbed our video recording so as to make it difficult to transcribe the data. Yet another problem came from inside the class itself. Some students were feeling unconfident to show their performance in front of the digital camera, so that they may not have performed genuinely. However, overall, we felt satisfied and happy, since all students' activities could be recorded successfully.

### 3.3 Data Analysis

The process of data analysis began with transcribing the audio-video. It was a verbatim transcription in order to recognize all of the students' activities and their conversations in learning by using the group discussion method during observation. The analysis was then continued by defining the fourteen critical thinking concepts adopted from Moon (2007). Meanwhile the definitions of the critical thinking concepts were taken from the Meriam Webster and Cambridge online dictionary.

Table.1 Definition of critical thinking concepts

Critical Concepts	Definition
Care	Effort made to do something correctly, safely, or without causing damage.
Understanding	The knowledge and ability to judge a particular situation or subject. An informal agreement.

Critical Concepts	Definitions
Appraisal	The act of judging the value, condition, or importance of something: the act of appraising something.
Analysis	<p>A careful study of something to learn about its parts, what they do, and how they are related to each other.</p> <p>An explanation of the nature and meaning of something.</p>
Evaluation	A systematic and objective assessment of an ongoing or completed project, program or policy, its design, implementation and results.
Management	The act or process of deciding how to use something.
Action	<p>The manner or method of performing such as an actor's or speaker's deportment or expression by means of attitude, voice, and gesture).</p> <p>A function of the body or one of its parts.</p>
Reflection	<p>Thinking carefully and quietly.</p> <p>Serious thought or contemplation which means making new information, focusing on it, and making sense of it</p>
Interpretation	<p>An explanation or opinion of what something means.</p> <p>The act of explaining, reframing, or otherwise showing your own understanding of something</p> <p>The action of explaining the meaning of something.</p> <p>An explanation or way of explaining.</p>

Critical Concepts	Definitions
Appreciation	<p>The act of recognizing or understanding that something is valuable, important, or as described.</p> <p>The recognition and enjoyment of the good qualities of someone or something.</p>
	<p>A full understanding of a situation.</p> <p>Having good taste or the ability to see aesthetic beauty in something.</p>
Awareness	<p>Knowledge that something exists, or understanding of a situation or subject at the present time based on information or experience.</p> <p><i>Awareness</i> can be something you notice, want to tell others about, or already know.</p> <p><i>Awareness</i> is the state of knowing something, such as the <i>awareness</i> that the sun comes up every morning.</p>
Review	<p>To think or talk about something again, in order to make changes to it or to make a decision about it.</p> <p>The act of considering something again in order to make changes to it, give an opinion of it or study it.</p>
Practice	<p>Something that is usually or regularly done, often as a habit, tradition, or custom.</p>
Being	<p>The most important or basic part of a person's mind or self.</p>

Next, we categorized the students' activities into critical thinking concepts. Activities showed by students throughout the groups' discussion from both classes were classified into specific critical concepts. To match each student activity which was found from our observations, we were guided by the definition of each critical thinking concept. Sometimes our dilemma was that it was difficult to determine students' activities into suitable critical thinking concepts. However, we were consistent with our perspective in analyzing students' activities and their critical thinking types.

Table 2. Students' activities and categories of critical concepts of fifth grade A class on the topic Indonesia's Strategies in Overthrowing the Colonizers.

<b>Activities</b>	<b>Categories of Critical Thinking</b>
All students stand up and answer the greeting from teacher at the beginning of the class.	Practice
Students read their reading material in the groups without any instruction. Students who still are unclear about the group discussion's task take initiative to ask the teacher. All of the group members copy the discussion result on their own paper. Student draws a picture on her paper.	Action
Students respond to friends' opinions.	Understanding
Students choose one of the group members as a note taker in discussion.  Students are divided for presentation slots.  Students set the place and their own position when discussing.	Management

<b>Activities</b>	<b>Categories of Critical Thinking</b>
Students hint at their friends to be quiet.	Care
A student associates the discussion task with a war movie.	Analysis
Students directly mention their friends' names when the teacher asks who are absent.	Awareness
A student raises his hand when teacher divides the reading material and ask them who has not got it yet.	
All groups take turns to present their discussion results.	Interpretation
Students watch and listen to the group presentations.	Appreciation
The students applaud their friends' presentations.	

Table 3. Students' activities and categories of critical thinking concepts of fifth grade B class on the topic: Creating a TV Advertisement.

<b>Activities</b>	<b>Categories of Critical Thinking</b>
The students move together to set the table and the chair, they prepare the place to conduct the group discussion.	Practice
The students directly prepare the equipment for writing when they hear the teachers' instruction.	
All group members greet together and also present the title of their advertisement.	
Oh...thank you very much.	
Enough from us, and so sorry if we have made a mistake during our	



Activities	Categories of Critical Thinking
<p>presentation.</p> <p>All group members greet ‘salaam’ together and also present the title of advertisement. They also prepare the equipment to support their performance, such as chair and table.</p> <p>Drink fresh tea, please. One of group members gives a bottle fresh tea to her friend. Thank you so much. They drink fresh tea directly.</p> <p>Thank you for your information.</p>	
<p>The teacher asks the students who did not come today, the students directly answer the question by mentioning the name of their friend who was absent.</p> <p>The teacher writes the topic of the lesson on whiteboard. The students directly respond by asking about the topic.</p>	Awareness
<p>The teacher says that each group consists of five students. The student responds to the teacher statement by saying if one student had not come, then we would have one group with only four members.</p> <p>Some of the students remind their friend in another group to follow the instructions from the teacher.</p> <p>T: Keep in front of the camera, ok?</p> <p>S: Why don’t we stand over there, sir?</p> <p>T: Except group 3, all of you move closer!</p> <p>S: Hei...be careful!</p>	Care

Activities	Categories of Critical Thinking
<p>We have a solution for your problem, please try Pepsodent toothpaste.</p> <p>What happened with you guys?</p> <p>Oh... Someone hungry?</p> <p>Be patient, Nasha... Calm down!</p> <p>Hmm... something smells?</p> <p>Hei... stop, stop! What are you doing? You are very small.</p>	
<p>The teacher: What do you think about the first step?</p> <p>The student: The early steps are to start fill the form task, sir.</p> <p>The teacher: Yes, each member do one step, then you should explain about your product.</p> <p>The student: Sir, it means we just create one advertisement for one product.</p> <p>We have a feeling of spiciness, because of eating the bakso.</p> <p>So, fresh tea is very fresh. Yes, I agree with you.</p> <p>What did you say? I want it.</p>	Understanding
<p>The teacher: Hopefully, each member in group will participate to do each step of the task.</p> <p>The student: Sir, its means each member will do one step.</p>	Analysis
<p>The students divide the roles in their group independently without</p>	Management

Activities	Categories of Critical Thinking
<p>suggestions from the teacher.</p> <p>The student asks other members in his/her group to practice the role play.</p>	
<p>Each student in a group gives feedback to their friends, especially about their performance.</p> <p>Owww. My teeth are bad because I really like candy.</p> <p>Three of them use the toothpaste (role play).</p> <p>One... two... three... four... five... six... seven... eight... Ouch... problem with my stomach. Even though I want to eat some biscuits.</p> <p>Three of group members eat <i>bakso</i> (meatball soup). Then, they react to its spiciness.</p> <p>Oh my God, You are very greedy... What? My biscuits are empty?</p> <p>Both of them run around the field. Ouch...stop, stop. Let's sit just a moment.</p> <p>You are very smelly. No, I am not. But, you are... (Everybody in classroom laughs together). No, you... you.</p> <p>Ouch... problem with my stomach.</p> <p>A student comes by scratching his body because a mosquito bit him.</p> <p>They use <i>telon</i> oil directly.</p>	<p>Action</p>
<p>The student asks the teacher: How about our performance Sir,</p>	<p>Evaluation</p>

Activities	Categories of Critical Thinking
<p>should we do it in front of the camera?</p> <p>How about your teeth?</p>	
<p>The toothpaste treats the problem with my teeth. That is why you should use this toothpaste. And all of you must brush your teeth three times a day.</p>	Appraisal
<p>Fresh tea is one of the drinks that consist of many fresh fruits. It also has varied taste such as jasmine, apple, orange and so on. That is why fresh tea can refresh our bodies. Thus, you should drink fresh tea every day.</p> <p>Ok, I have a delicious biscuit. The name of the biscuit is Slai Olai (shows the biscuit). This biscuit contains good vitamins and minerals- very good for your body and health.</p> <p>If a mosquito bites you or you get a fever, so all you can use <i>telon</i> oil.</p> <p>Yeah, use the <i>eskulin</i> gel. I use it that is why I am sweet-smelling.</p>	Interpretation
<p>Other students give applause (claps) to them.</p>	Appreciation

Finally, we identified the kinds of critical thinking that appeared and did not appear during the learning activity using group discussion method. This step was conducted to conclude about the most critical thinking skills which emerged in students learning activities through group discussion.

## 4 FINDINGS

The learning process in the fifth grades classes A and B was conducted by the classroom teacher on the topics of “Indonesia’s Strategies in Overthrowing the Colonizers” and “Creating the TV Advertisement”. Students were asked to discuss the strategies of how Indonesian people conquered the colony, while the aims of advertisement lesson were that the students developed their creativity to create an advertisement and present it in front of the class through role play. In both the first and second day observations, the students did the same thing at the beginning of the class. The class leader led his friends to get ready when the teacher came into the classroom and greeted every answer made by the students. Then leader instructed all of the students to sit neatly. This belongs to their daily habit before the learning process begins, also the habit to read a prayer together in the morning class.

Classroom teachers began the learning process by checking the attendance list before starting the lesson. Teachers guided the students to come into their groups and instructed them to discuss the task. During the process of discussion, we observed that teachers actively worked as facilitators. They walked around the groups to ensure that students understood the instructions for the task. Students’ enthusiasm in asking questions related to the task were also high in this observation. In short, we observed that the learning process using group discussion provided more interaction both between teachers-students and students-students.

The following discussion describes several critical activities showed by students during the group discussion processes that were observed in both fifth grade classes.

### 4.1 Practice

One critical thinking labelled as practice was the students’ habit to stand up and answer the greeting from the teacher at the beginning of the class. This was a common activity of critical thinking, which emerged in every teaching method used by the teacher. Especially in

collaborative learning, students always greet their friends when opening or closing their presentation in front of the classroom. The extraordinary thing related to this critical concept was students' complaints when their friends did not follow this kind of habit. They also said "thank you" after presenting the discussion task or when they got something from their friends or teachers.

On the other side, the students directly did the things that had become their habit in the classroom such as working together to set the table and chairs when conducting the group discussion. They also prepared the writing equipment after getting the teachers' instructions. The other routine that students did was saying "I am sorry" when they made a mistake toward their friend or the teachers.

The fifth-grade students of Sukma Bangsa practiced all of the activities mentioned above. It was shown that they constantly did critical activities during the learning process in the classroom. Consequently, the students' characters would improve when they practiced those activities. Moon (2004) stated that the thinking character of individual would be influenced by their critical activity. They could express what they thought how they considered others and could show their emotional feelings. Emotion could be one of the issues in thinking; it influences an individual to be a critical thinker.

## **4.2 Action**

Action was one of the critical thinking categories seen from students, who directly read their reading material without any instruction from the teacher. It happened spontaneously when they were directed to sit in a group. Students were engaged in reading the handout. Moreover, students who needed more explanation or were still unclear about the discussion task had the initiative to ask the teacher by calling him/her to come over. The other action found in the learning process by discussion in a group was interaction among students. The interaction occurred not only between students in the same group, but it also happened between students from different groups. Gillies (2003) argued that activities in groups are designed to support students to think about the problem more deeply before trying to solve it. Thus, the students should be challenged to engage in meaningful interactions with their mates to gain the contribution of the learning. This is in line with Gillies and Boyle (2010), who stated that

students are taught to interrogate issues, share ideas, clarify differences, and construct new understandings through interaction. In fact, the connections built in groups might not relate to the task they needed to discuss, such as joking or talking about something out of the lesson context. Furthermore, agreement to make a copy the result of the discussion on their own papers before presenting was an action seen to be done by all students involved in the group discussion. Surprisingly, at the end of the discussion process in the fifth grade A class, we found that a student enjoyed drawing a picture on her paper while waiting for the presentation session.

In the fifth grade B class, students in the group got the task to create a TV advertisement. Every group began the discussion by asking “What should we do?” By asking a particular question or providing a suggestion, this would transfer the student to a higher level in critical thinking. This is the characteristic of the student who is in the zone of proximal development (Vygostky as cited in King, 2012). The students could advise each other to solve the problems until they were able to solve it by themselves. Additionally, the advice could be given in the form of guided questions, action models, award, feedback, giving the information, and peer tutoring.

Furthermore, the students discussed about kinds of action they would do to complete the task. They shared the acting roles in presenting the advertisement. There were the students who acted as people who had problems with their teeth, stomach, spiciness, scratching, and jogging. Their actions were; “Hmm... very spicy” (some of group members were eating meatballs), “Ouch...my teeth are bad because I really like to eat candy” , “Ouch... something’s wrong with my stomach, I want to eat some biscuits”, “Stop, stop! Let’s sit a moment” (acting to stop the jogging), “I was bitten by mosquitoes” (a student scratching himself).

Generally, all group members indicated that they had the same thinking to begin their role plays, and they tried to explain their ideas by acting. All members in the groups showed their action when they presented the role play in front of the class. Similar to the group discussion in fifth grade A class, the interaction among the students was also found as critical thinking activities shown by the students in creating the advertisements. Some of them could attract their friends to share their ideas in the group discussions by asking them one by one.

### 4.3 Management

The critical thinking ability of management appeared from several students' activities in the learning process using group discussion. Learning by using group discussion began when the teacher divided the students into small groups consisting of four students, grouping by number. According to Lou et al 1996 as cited by Gillies (2003), the advantages of small group work increases when the group's members do not exceed four members and the groups are mixed in gender and abilities. In this activity, the classroom situation was very crowded; students tried to find their group members by asking "Who gets number one?" (Other students mentioned other numbers). Then students who got the same number would gather in a group. They set the place and their own comfortable position to settle the discussion task by instructing the group members, such as: "We sit here", "Our group will be in that corner", "Here is our place", and "Let's discuss there".

Furthermore, they chose one group member as a note taker in the discussion. After finishing the process of the discussion, they managed their contribution to the group's work by dividing presentation turns. The conversations were such as: "We open the presentation simultaneously", "One of us reads the question and the answer will be read by another", "I will be the first speaker", "You read this number and he will continue to the next number".

Especially for the group advertisement task, they divided the roles to each group member in order to master the action in showing the advertisement of a product. We noticed there was a group member appointing one of their friends to act as a particular actor; "You pretend to be the one with stomach-ache", "You come while scratching your body", "You run around us", and "We will act like this".

Gillies (2003) stated that group members often act as mediators of learning to share ideas and information, respond or give attention to each other and encourage members to investigate new perspectives in cooperative work. Previous research has shown that applying group discussion was a helpful method to promote the students' achievement in the class. Another benefit of group discussion was making an individual become a better person, especially to



produce leadership skills for the future. In addition, the students who get the responsibility of leader should have the ability to manage themselves and other students to face the problems around them. Thus, management is an important aspect of critical thinking.

#### **4.4 Appreciation**

Appreciation was also a type of critical thinking which emerged among students in both fifth grade A and B classes. It could be seen when they decided to pay attention to watch their friends' presentations. They listened to the explanation from the group who stood in front of the class to deliver the discussion results and to perform the advertisements. After watching the presentations, the student viewers applauded it. They also showed respect when the groups performed a funny story or amusing action by laughing. They always proudly supported the group members when they spoke incorrectly, without teasing them. These activities indicated that students had shown critical thinking skills in learning by using group discussion.

#### **4.5 Awareness**

Observations of the group discussion learning process revealed that the students had awareness of the learning situation. When the teacher asked who was missing from the class, the students directly mentioned their friends' names and the reasons for their absences. Moreover, one student raised his hand and said affirmatively, "I don't get it yet", when the teacher divided the reading material and asked them who did not get it yet. These kind of activities indicated that students were basically able to express their critical thinking skill.

#### **4.6 Care**

In order to avoid the disturbance of their concentration during the discussion process, students hinted at their friends to be quiet. They expressed it by saying "Hush...keeps silent please!" or "Don't make a noise please!" These kinds of students' activity showed their critical thinking ability to care for each other. As described by Smith (1996), through collaborative activities, students obtain beneficial outcomes to themselves and other group members. Typically, working in groups is more than being physically near to other students, it also generates greater productivity such as caring, helping and sharing. Stating this differently, King (2012) said that

students have to acquire how to understand the aim of the subject matter, focus on the assignment, motivate their mates to address the issue, and keep giving positive comments, admiration and positive feedback.

Especially in fifth grade B class, five groups had shown how they cared about their friends when some of them had problems with their acting. They respected their friends by asking “What happened to you?” They also motivated their friends by whispering what their group member should do when they forgot the text or actions during the performance of the advertisement. Other students who watched the performance gave support to the actor without mocking them. Coles and Robinson (1991) as cited in Moon (2004) p. 47 described that “use the notion of critical thinking as a disposition in order to emphasize some positive characteristics of what they see as the effective critical person – a ‘respect for persons, readiness to consider alternative explanations, care for the procedures of inquiry, readiness to listen to others, a habit of judicious suspension of assent and a habit of self-appraisal’

#### **4.7 Evaluation**

Furthermore, the group discussion can emerge the students' ability to evaluate whatever happened in their group when completing the task. The students said, "How do you think about our plan?" or "Why do you do like that?" We can include these activities into one skill of critical thinking. In this skill, students can evaluate the progress in their group discussion by asking each other in finishing all steps. They discussed to ensure all steps in the task form were done or if they still needed to add some ideas. On other hand, they also informed each other about their performance in practicing the role play. Sometimes, the students asked the teacher to evaluate and give feedback their performance in practicing. The students asked questions, such as: "What do you think about our performance, Sir, should we stand in front of the camera?"

In addition, the students also showed their critical thinking skills when they presented the role play. Some conversations indicated that the student tried to evaluate, such as "How about your teeth?" The student wanted to know the condition of the friend's teeth after using the toothpaste. In addition, in another group the student asked his friend "How can you have spicity

food?". Then: "What do you say? Ok. I will do it." Each group expected to gain the logical reasons for the use of their product based on an evaluation given by others. The group hoped that the evaluation would ensure the use of the products.

#### **4.8 Understanding**

Further, students' ability to respond to their friend's opinions in a discussion proved that they had critical thinking skill in the form of understanding. When students responded to their friend's view, it meant they understood what their friend was talking about. For example, a student asked his friend "Why do you drink the fresh tea?", and his friend responded that "Because fresh tea is very fresh and has a good taste", and the students also said "Yes, I agree with you." The response could be their desire to know more or to ensure themselves about something. Smith (1996) p. 1 expected that "the more students work in cooperative learning groups the more they will learn, the better they will understand what they are learning, the easier it will be to remember what they learn, and the better they will feel about themselves, the class, and their classmates".

Moreover, the students responded to the teacher's explanation about the topic when he wrote on the whiteboard. In line, they also showed a positive reaction when the teacher asked about what kinds of product they would present in the advertisement. In addition, the student could answer the questions on their understanding about the steps in the formation task which had to be completed by them. The teacher said: "What do you know about the first step in the task form?" The student directly responded: "The first step is to fill the form task, Sir." Then, the teacher stated: "Yes, each member do one step, then you should explain about your product." "Sir, it means we just create one advertisement for one product" the students answered. Based on all these activities that the students practiced, we can conclude that the students indicated their understanding in critical activity during the discussion sessions.

Therefore, the students independently expressed their understanding by using their own opinions during the discussion process. They were brave to answer the questions from the teacher and their mates because they really understood about the subject matter. In other words, the students were capable of judging a particular situation that happened with their friends and with the teacher also. Generally, it could be seen from the students who answered questions or when they explained their ideas by logical reasoning.

## 4.9 Analysis

Students' ability to analyze the topic in group discussion is claimed to emerge from critical thinking skills. One way to foster critical thinking skills in learning is by allowing students to be creative in discussing the lesson. In this case, a student associated the discussion task with a war movie. Critical thinking happens when students analyze movies, through which they can then learn how to make judgments and decisions, interpret information and draw conclusions related to their discussion task.

In addition, when the students started to understand and analyze the teachers' instructions about the task, it provided one way to emerge critical thinking skills. It happened while the students created the steps of an advertisement. Ideally, all members in group discussion should participate and be active when they conducted the discussion session. The teacher said: "Hopefully, each member in the group will participate to do each step of the task". The students' answer was "Sir, it means each member will do one step". It meant that the students had to analyze what they had written in the first step so as to have relation with the next step.

For example, one group discussed the topic of fresh tea:

Student 1: "What should we do in the first step?"

Student 2: "Ok, two of you sit there. You act like you are eating something."

Student 1: "Are you sure? That's like original ones on the television."

Student 3: "I think it's no problem. But, maybe we can ask Pak Hendri to make sure of it".

Student 1: "Come on guys, do you have another idea?"

Student 4: "Firstly, both of you eat bakso, and then you react to its spiciness. Secondly, Taura and Sheva come and ask why you are reacting to its spiciness. What do you think?"

Student 1 and 2: "Ok, we agree with your idea."

Student 5: "How about me? What must I do?"

Student 1: "Oh... How about Chosi?"

Student 2: "I think three boys should eat bakso and react to its spiciness. Then, two girls come and ask: What happened with you guys? Further, the girls will give fresh tea to the boys. How about that?"

Others: "Ok, ok, that's a good idea."

Based on the conversation, the students showed their critical thinking skills in analyzing the first step in creating the advertisement. In line, the students learnt how to build opinions to support their idea, to confirm the idea, and about the decision-making related to their discussion task.

According to Jennifer Moon (2004) collaborative learning is a form which provides a way for the students' ability in analyzing, synthesizing and evaluating their ideas through a cooperating system. Generally, the students will be able to share their ideas through interaction in discussion. It is clear that by interacting the students can learn from each other, especially accepting the other's ideas, and how to respect to the judgments and reflections of others.

#### **4.10 Interpretation**

The other skill in thinking critically is interpretation. It can be seen from the explanation that the student demonstrated this ability. In this case, in the fifth grade A class, all groups members got turns to present the discussion results. Most of them stood in front of the class with confidence. Only a few students seemed less confident when making a presentation. It could be seen from their expressions such as nervousness, embarrassment, and covering their face with a book. However, the presentation was conducted only in a short time, to answer questions based on their reading material. Most of them presented the discussion results by reading notes without any additional explanation. Only one student in one group delivered her presentation without any notes.

On the other side, the aim of the group discussion in fifth grade B class was to present good steps in creating an advertisement. Each discussion group also had to perform a good advertisement in their role play. One of the categories for a good advertisement is showing the product as interestingly as possible. So, the students explained the benefits of the product and persuaded the consumer using logical reasoning. For example:

Group 5: “Fresh tea is one of the drinks consisting of many fresh fruits. It also has various flavorssuch as jasmine, apple, orange and so on. That is why fresh tea can refresh our body. Thus, you should drink fresh tea every day.”

Group 1: “Ok, I have a delicious biscuit. The name of the biscuit is SlaiOlai (shows the biscuit). This biscuit contains good ingredients, such as vitamins and minerals, and is very good for your health.”

Hopefully, the consumer would buy the product for those reasons. Fortunately, four of the five groups could interpret the benefits of their products through good explanations. Mostly, they designated logical reasons for their product by mentioning the advantages of the product, the content of the product and the reasons why the consumer needed to buy the product. Ennis (1985) as cited in Emily (2011) argued that the other ways in which abilities in critical thinking can be shown are clarifying the topic by asking and answering questions, assigning the subject, recognizing opinions, interpretations and explanations, and logical ideas.

#### **4.11 Appraisal**

The next skill in critical activity that was shown by the students in group discussions was appraisal. The students persuaded others about the advantages of the product which they had presented. This activity related to interpretation, a skill used whenever the students express their ideas to influence others by giving a clear statement and supporting logical reason. Such as "the toothpaste treats the problems with my teeth. That's why you should use this toothpaste. And all of you must brush your teeth three times a day." Perhaps, they persuaded, the product that they had was the best one. They gave an opinion about the condition and the importance of something to the others. Further, the students will be accustomed to think critically about other issues that will face in the future if they commonly use interpretation and appraisal skills. Additionally, they can develop their capacity in thinking and understanding the issue. Then, they will try to solve problems by appraising them. The students will find it easier to persuade others if they are capable of providing arguments to others using supporting evidence: true or false, clear or unclear, acceptance or rejection.

## 5 DISCUSSION

Generally, discussion in the learning process aims to train the students' ability to think, namely through the expression of ideas, opinions, comments, criticisms, and so forth. Several things that should be prioritized by the teacher in conducting group discussion are avoiding the action of the students who dominate the discussion, by giving a chance to other students considered as reticent and providing a stimulus to them. Moreover, teachers should encourage students to respond to the conversations of other friends, so that the interaction between all participants occurs. Teachers also should avoid students' simultaneous responses, so that every student can individually express their thoughts freely, based on their own understanding.

The teachers' task becomes more directional when they can manage the class appropriately. Classroom management is an activity that must be prepared by the teacher before teaching. Particularly when using group discussions, teachers should consider accessibility, mobility and interaction of students. Teachers should ensure that the place for the discussion is convenient for all participants. When forming the groups, teachers must pay attention to the number of students in a group. The numbers of students in a group should usually consist of 4 or 5 students, or it can be adjusted by the number of students in the classroom. Moreover, the number of groups in one classroom also must be considered. If the number of groups in a classroom is too many, teachers will find it difficult to guide them in the discussion process. Most importantly, the composition of the students in a group must be created by considering gender and ability. Indeed, in students' arrangement in the group it is advisable to combine gender and individual capabilities.

So far, all of those group discussion types were applied to primary students in Sukma Bangsa through thematic learning. Although both teachers' and students' efforts could not fully maximized in this process, the researchers believe that it can be trained repeatedly to reach the group discussion learning goal as well as possible.

Nevertheless, the group discussion in this research, which was conducted with fifth grade students of Sukma Bangsa primary school, only focused on their work together in small groups

to solve several questions related to the lesson. The students only prepared the discussion task and then presented it. There were no questions or responses from other groups after the presentations of the discussion results. There was no debate between groups. A study by Galton et al, (1999) as cited in Gillies and Boyle (2010) indicated that students seldom ask challenging questions where they are required to think about the issues and provide reasons for their responses. This is a concern because Kuhn, Shaw, and Felton (1997) found that the student's quality of reasoning about that topic enhances when they engage in thinking about a topic through dyadic interaction. Indeed, the teachers have the ability to improve and shape student's questioning ability by providing responses that encourage ongoing interest in the topic discussion. (Zuckerman, Chudinova, and Khavkin (1998).

Student participation, teacher encouragement, and student-student interaction positively relate to improved critical thinking. These three activities confirm other research and theory stressing the importance of active practice, motivation, and feedback in thinking skills as well as other skills. This confirms that discussions . . . are superior to lectures in improving thinking and problem solving. (McKeachie, et al., 1986 cited in Smith 1996, p. 2)

Even though the lecturing method was not the goal of this research, it was observed, because group discussion in fifth grade students began with lecturing before the students sat in their groups to work on the task. Observation of the lecturing method found that only few students appeared to express their opinions during the learning process. Most of the students became passive learners; they listened to the teacher's explanations without any responses. Therefore, it was difficult to identify the critical thinking skills of the students when the teacher used the lecturing method in the learning process. Even though students' ability to think critically could be observed from their learning activities, only few critical thinking categories could be found from the lecturing method.

When using the lecturing method we found that interaction was always centered to the teacher. Additionally, as teachers we have faced difficulties in recognizing the students who have mastered the material when using the lecturing method in learning. However, we claim that the learning method of lecturing is still important for students to get information about a particular subject or issue. Through this method, students can be trained to use their listening well to capture the contents of a lecture and conclude quickly and precisely. However, the



implementation of the lecturing method requires specific skills, so that the presentation is not boring and can attract the attention of students.

Students' ability to think critically is not a new model in learning. It relates with Bloom taxonomy, which regards that critical thinking is a combination of the abilities to analyze, synthesis and evaluate knowledge. For example, on a particular theme, students' ability to think critically can be identified from their questions about the causes of the phenomena around them. When students get the answer and correlate it with other knowledge, then draw their own conclusions, this means the abilities to analyze, synthesize and evaluate have been combined. As previously discussed, students' critical thinking skills also can be identified from their problem solving capabilities. For example, when they find a withered flower in front of their class, they will change its position and start watering the flower.

On the other hand, discussion is an appropriate way to develop students' critical thinking skills. Therefore, a teacher who should teach students to think critically can encourage them to discuss with each other. Teachers should support the students to express their arguments and explain them to their friends. In this case teachers also can stimulate them by asking simple questions or making statements. Nevertheless, discussions may not be productive if students do not prepare well.

The ability to think critically can be seen from several aspects, such as writing and discussion. Teachers who want to know about students' critical thinking skills can ask them to write a description of a phenomenon. The teacher also can ask students to write a short story about the events seen or experienced. Additionally, students can be asked to discuss while teachers observe the way they ask and answer questions related to the issue.

## 6 CONCLUSION

The first research question of this study was aimed to know the kinds of critical thinking skill arising when fifth grade students learn using group discussion. In order to answer this question, we have explained the many kinds of students' critical thinking which emerged in students' activities during group discussion. This study found that fifth grade students of Sukma Bangsa elementary school showed eleven of the critical thinking categories. The critical thinking categories showed by students were: practice, action, understanding, appraisal, analysis, evaluation, management, appreciation, evaluation, care, awareness, and interpretation.

According to our findings, the researchers claim that the students in fifth grade at Sukma Bangsa School regularly applied their critical thinking, especially action, appreciation, care, awareness and practice. It happened because those categories had become a habit for them. Additionally, the habit had been constructed earlier in the first grade. Thus, it had become ingrained for the student.

Furthermore, the school components, such as the principal and teachers, have tried to develop many activities in the classroom to increase students' thinking consistently. On the other hand, the teachers also created a good lesson plan when teaching the students. The content of the lesson plan that was created showed a good step in encouraging the students' critical thinking.

In addition, the other categories such as understanding, evaluation, management, analysis, appraisal, and interpretation were also shown by the students in the fifth grade at Sukma Bangsa School. In reality, not all students could build their critical thinking for those categories. Mostly the students who can express their skill in critical thinking are the students who have good abilities in thinking. The students' critical thinking can also emerge if the teacher and peers help them. In this case, the teacher can provide good instructions while the students are completing their task. Moreover, the teacher should offer good questions to stimulate their thinking; the students also can express new ideas with the support of their peers in group

discussions. As a result, these strategies not only increase the students' confidence to talk to each other, but also to express their opinions.

Based on the critical thinking activities that the researchers adopted from Moon (2004), there are fourteen activities involved in thinking critically. After conducting the observations, we could find just eleven activities in critical thinking among the fifth graders at the Sukma Bangsa School. We found that three activities of critical thinking did not appear among students in fifth grade, such as being, reviewing and reflection. This relates more to the cognitive development of the students. At this age (11 years old), the students still need to build their ability in thinking.

The second research question was intended to know the process of group discussions undertaken to encourage critical thinking of the students. This study revealed that a learning process by using group discussion could facilitate students to express their critical thinking skills. All types of group discussions provide them more opportunities to speak. Students' conversations in group discussion played an important role in reaching the learning goal. Numerous general comments in the discussions such as: "Look at this!" (a member pointing to an information), "Maybe we must read it to find out more on this" (searching for information needed); "It looks like they will tell us more about it" (problems they were trying to solve). The conversations among group members served to mediate each other's learning by giving explanations, focusing attention on the problem of the discussion, and challenging each other's perspectives on important points related to the task. This interactional process involved the students in reciprocal interactions that served to mediate and scaffold their learning, which would be a critical to the success of the groups (Gillies 2003). Therefore, students' ability to think critically and their capacity to express opinions will develop after getting experiences in collaborative learning.

## **Recommendations**

Based on the study that we conducted, we have created some recommendations to improve teacher strategies. The recommendations created are based on both theories and our findings. Overall, we hope that the recommendations can be a guide and reference for all teachers, not only the teachers at Sukma Bangsa School.

There are three recommendations that can improve the teaching strategies of the teacher. Firstly, the teachers should provide the instructions for the task clearly. The instructions should describe the preparation in general for the task, as well as practice in implementing skills of critical thinking within the context of the lesson. Practically, they can explain these in the beginning before the students start to work in group discussion. It is not only useful to attract the students' attention, but also to keep their focus. Secondly, the teachers have to be involved and participate in supporting the students during the work in group discussions. They could help the students to deepen their understanding of the tasks. This will also promote the students who lack ability in public speaking. Finally, the teachers must be able to organize the best methods when arranging the students into groups. Moreover, they should be aware of properly combining the students in one group, to avoid domination of the students who have high ability over those who have low ability within the group.

Furthermore, there remains a task for further research to analyze and explore other strategies that can be used to facilitate the students' critical thinking in fifth grade at elementary school. Practically, group discussion is only one of the strategies, and also other several other strategies exist in teaching. Thus, the students would be used to thinking critically when facing problems and solving them in their future lives.

We hope this study will provide positive impact to the development of learning methods in the future, and that the results of this research will motivate teachers in preparing the best learning strategies, especially the use of group discussion. The findings of this research can become an evaluation for teachers in order to arrange the most excellent steps for fostering students' critical thinking skills, for instance, in planning the learning material, grouping students and delivering appropriate instruction for discussion tasks. Hopefully this study will help

teachers to apply group discussion, which can serve as an intervention strategy to enhance the emotional maturity of the students.

We realize that this research has weaknesses, because we did only observation, due to the limited time for doing this research, so that the results merely represent one perspective from the researchers. However, observation may have helped the researchers to see students' critical thinking and their interaction directly. However, further research is still needed to analyze and explore other strategies that can be used to facilitate students' critical thinking in the fifth grade at elementary schools.

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